

MIT student, police officers testify about Sean Collier death

Tsarnaev trial's second week sees emotional testimony, new footage

By Austin Hess, Sanjana Srivastava, and Drew Bent
STAFF REPORTERS

The trial of Dzhokhar Tsarnaev for the 2013 Boston Marathon bombings and subsequent murder of MIT police officer Sean Collier entered its second week with emotional testimonies and never-before released evidence about Collier's death.

MIT and Cambridge police officers and a PhD student witness testified Wednesday about the April 18, 2013 shooting of Collier. The prosecution also presented distant footage of the murder, which showed two figures approaching Collier's squad car parked between the Stata Center and Koch Institute for Integrative Cancer Research and then fleeing through North Court.

Although Collier had been shot twice in the side of the head, once between the eyes, and three times in his right hand, "there was a slight pulse still beating from his carotid," said MIT Police sergeant Clarence Henniger, who reached him first. Despite medical assistance, Collier was pronounced dead upon arrival at Massachusetts General Hospital.

Collier's death

Wednesday's testimonies on Collier's death began with MIT Police chief John DiFava.

At around 9:30 p.m. on April 18, 2013, DiFava saw Collier while leaving campus. "I chatted with him for a few minutes, I told him to be safe, and I left." That was the last time DiFava saw Collier alive. DiFava stayed in the courtroom

after his testimony and was seen comforting others, while also periodically rubbing his eyes.

In video footage captured that night by a security camera on the roof of the Green Building, Collier drives through North Court along the road bordering Stata, bringing his cruiser to a stop in front of the Koch Institute's Main Street entrance shortly after 10 p.m.

Two figures can be seen walking at 10:23 p.m. from the Ames street corner along the path in front of the Koch Institute to Collier's cruiser at other side. The pair runs up to the cruiser, arriving at 10:24 p.m. A figure leans into the driver's seat for a while, at which point a bicyclist comes up the Stata path and passes them.

It was at this time that the Tsarnaev brothers allegedly shot Collier. Then at 10:25 p.m., the two figures emerge and run away.

At 10:30 p.m., police officers and vehicles begin gathering around the cruiser.

Nate Harman, the bicyclist who passed the cruiser and a PhD candidate at MIT, recalled seeing someone by the vehicle. "I just assumed he was an MIT student: young, normal height, thin; he was wearing a dark sweatshirt and a hat," said Harman.

"I remember thinking he had a big nose, but nothing beyond that really," he recalled. "I just laughed, thought I just startled him, just kept going," not realizing anything was wrong. Although the video shows two figures, Harman testified that he "only saw one person."

When lead prosecutor William

Tsarnaev Trial, Page 17

Christina Tournant, freshman, dies while at home in Florida

Chancellor speaks at gathering held in her memory



By Katherine Nazemi and William Navarre
NEWS EDITORS

Christina E. Tournant '18, who lived in Maseeh Hall, died last Thursday in Florida while on voluntary medical leave. She was the second freshman MIT had lost in a week.

The 2014 valedictorian of Osceola

High School, Tournant was interested in studying biomedical engineering at MIT. Tournant was a sister of the Alpha Phi sorority as well as a diver on the swim team.

"She was that kid that was just happy," Tournant's mother, Tava Wilson, told the *Tampa Bay Times*. "She wanted to do all kinds of fun things."

The newspaper reported that minutes before Tournant was found dead last Thursday night, apparently having jumped off a parking garage at Tampa International Airport, she had sent a text message to her mother: "I love you, mom."

"Sorry," she wrote in a separate note, "I couldn't keep fighting."

Tournant had been suffering from postural orthostatic tachycardia syndrome for the past two years, the *Tampa Bay Times* reported. The syndrome caused her severe pain and circulatory issues. Her condition worsened in December, and in February, she took medical leave from MIT.

Wilson said it was the physical

pain that led to her daughter's "emotional pain."

"She was very stoic and didn't want to let on how horrible she was feeling ... She was really stoic to a fault," Wilson said.

MIT President L. Rafael Reif notified campus of Tournant's death in an email last Friday.

"This is a moment when we need each other, a moment for caring, understanding and kindness," he wrote. "We will come through this tragic period together."

Maseeh Hall residents met with their housemasters, graduate resident tutors, and MIT Mental Health representatives last Friday. A larger community gathering was held in Lobby 7 on Saturday to remember Tournant.

"People across our community are feeling the impact of the recent losses and those that came before," Chancellor Cynthia A. Barnhart PhD '88 said at the gathering. "There is no

Tournant, Page 3



VIVIAN HU—THE TECH

Students gather in Lobby 7 to remember Christina Tournant Saturday afternoon.

IN SHORT

March 23–27 is spring break. Enjoy your week off!

Active Minds will host a panel on medical leave Wednesday March 18 from 5 to 6 p.m. in 4-149. Come hear returning students, S^3, and MIT Medical talk about the process of taking leave from MIT.

The spring Underclassmen Giving Campaign (UGC) will be in Lobby 10 the week of April 6. Donate to support public service projects to be undertaken by students this summer.

Send news information and tips to news@tech.mit.edu.

Bitcoin Expo addresses the future of the currency

MIT holds second annual Expo over two days

By Karia Dibert
STAFF REPORTER

Speakers travelled from all over the country to 26-100 last weekend to discuss the future of bitcoin during MIT's second annual Bitcoin Expo. The event was live-streamed to benefit remote viewers.

After a successful run last year, MIT Bitcoin Club president Jonathan Harvey-Buschel '18 said that for 2015, the club wanted to "take it to the next level." Harvey-Buschel estimates that about 500 people attended this year's expo.

This year, the Bitcoin Expo consisted of over twenty events spread out

over two days, punctuated by meals and "networking breaks." The speaker and panelist lineup included founders and CEOs of bitcoin-related companies, engineers at these companies, various professors, and students.

The event addressed bitcoin from a financial point of view on Saturday and a technical one on Sunday. Many who were interested in one aspect more than the other chose to attend only one of the days.

Saturday's opening keynote was delivered by Charlie Lee MS '00, creator of the bitcoin alternative Litecoin and Engineering Manager at Coin-

Bitcoin Expo, Page 9

Phoebe Wang's cause of death determined

The death of MacGregor resident Phoebe Wang '17 on Sept. 21 has been ruled a suicide, according to an email from Terrel Harris, a spokesman for the Massachusetts chief medical examiner's office. The cause of death was listed as "asphyxia due to displacement of oxygen."

"Phoebe was a very active member of MacGregor house and played flute in the MIT Symphony Orchestra," Reif wrote in a Sept. 23 email to the MIT Community, which did not specify the cause of death.

Wang, who hailed from Chesterbrook, Pennsylvania,

had worked at MIT's Lewis Music Library and conducted research for the MIT Energy Initiative, according to her Facebook profile.

An obituary published by MIT News said that Wang was known for her sense of humor, her curiosity, and her desire to explore.

Members of the MIT community can access MIT student support resources and Mental Health Services at <http://together.mit.edu>, or via phone at 617-253-2916 during the day and at 617-253-4481 during nights and weekends.

—William Navarre

NEW EBOLA TEST

MIT develops new method that could take less than ten minutes for a diagnosis.
NEWS, p. 13

REMEMBERING THOSE WE'VE LOST

The Tech's editorial board addresses the tragedies on campus. **OPINION, p. 4**

CONVERSATIONS ON MENTAL HEALTH

Notes from faculty and a message from a student. **OPINION, p. 4**



YO-YO MA PAYS A VISIT TO BOSTON

Check out our review of the great cellist's performance at Symphony Hall.
ARTS, p. 9

A CAPELLA CONTEST

MIT hosts NCCA Northeast Quarterfinal.
ARTS, p. 10

SECTIONS

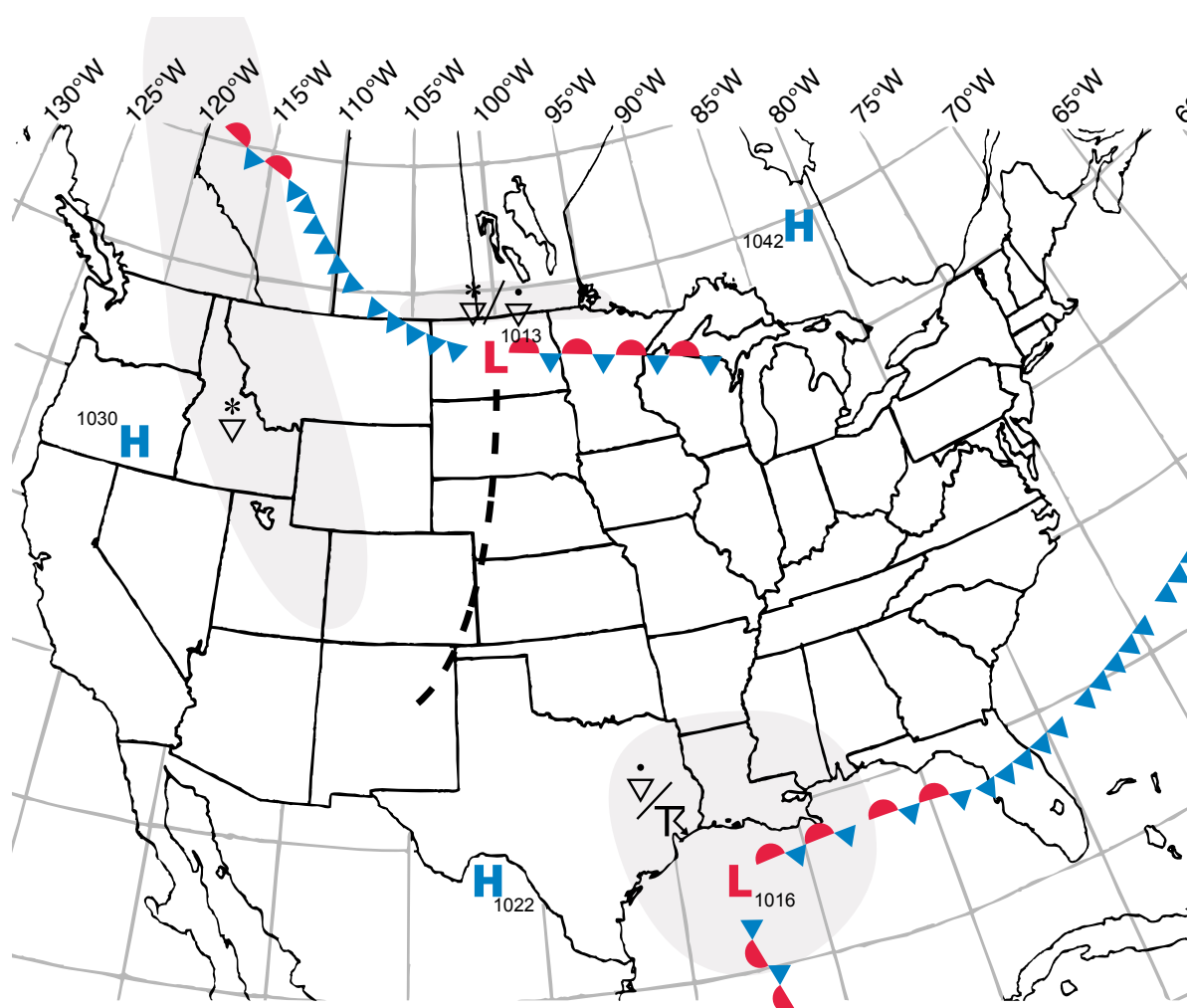
Weather2
Opinion4
Fun Pages7
Arts10
Sports19



















Boston inching toward snowfall record

STAFF METEOROLOGIST

In the short term, a significant cooldown is occurring in advance of the weekend storm, with brisk winds ushering in cold air from the northwest. This will cause today's high temperature to be around 20°F (11 K) cooler than yesterday's.

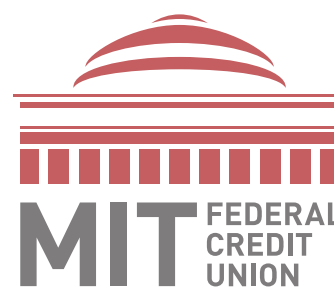
Today: Windy and mostly sunny, high 36°F (2°C). Winds NW at 20-30 mph.
Tonight: Breezy and clear, low 20°F (-7°C). Winds NW at 10-15 mph.
Tomorrow: Partly cloudy, high 38°F (3°C). Winds becoming S, at 5-10 mph.
Saturday: Rain and possible snow, highs near 40°F (4°C).
Sunday: Snow and rain showers possible, highs in the mid 30s °F (3°C).



Weather Systems		Weather Fronts		Precipitation Symbols			Other Symbols	
	High Pressure		Trough		Snow	Rain		Fog
	Low Pressure		Warm Front	Showers				Thunderstorm
			Cold Front	Light				Haze
	Hurricane		Stationary Front	Moderate			Compiled by MIT Meteorology Staff and <i>The Tech</i>	
				Heavy				

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Financial aid budget, exceeding \$100 million, is highest ever

MIT will allocate \$103.4 million to undergraduate financial aid next year, the MIT Corporation announced at a meeting on March 6.

This marks an 8.8 percent increase from the 2014–2015 budget and is the first time that MIT’s undergraduate financial aid budget has exceeded \$100 million.

According to MIT, next year’s budgeted increase reflects a commitment of \$3.2 million to reduce the “self-help” portion of MIT’s financial aid package, which students generally contribute through loans and earnings. The current aid package includes a \$6,000 “self-help” contribution.

A 3.75 percent increase in

undergraduate tuition and fees was also announced by the Corporation. According to an MIT news office release, Dennis Freeman PhD ’86, the dean for undergraduate education, said the \$103.4 million financial aid budget will both cover this increase and “lower the net price for all students with financial aid.”

Fifty-nine percent of MIT’s undergraduate population receives need-based financial aid from the Institute. Thirty-two percent of undergraduates attend MIT tuition-free.

MIT’s financial aid budget has increased steadily since 2000, when it amounted to \$30.5 million.

—Jennifer Switzer

President Reif and Chancellor Barnhart express sympathies

Many faculty and staff members choose to lighten class work loads, postpone problem set due dates

Tournant, from Page 1

shame in asking for help and support.”

Tournant’s death came less than a week after the death of Matthew L. Nehring ’18, which Reif announced on March 1.

“Four days ago, we gathered in lobby 10 for a similar reason,” Barnhart said. “Coming so close together, [the deaths] are a terrible blow,” she said.

Faculty members have also addressed the deaths in lectures and emails.

“These heartbreaking losses are impossible to fathom.” Professor George C. Verghese wrote to 6.011 students. “We are unlikely to ever have the answers we might want,

not having walked in their shoes. That doesn’t stop our questions, and our wondering what might have made a difference — and what might still make a difference to others in despair.

“But at a time like this it is also important to — and perhaps impossible not to — reflect on life, and on what matters to us, individually and together.”

Verghese canceled Wednesday’s 6.011 lecture and said students did not have to turn in one of the class’s problem sets. He also invited students to visit the Harvard Art Museums with him.

In an email to his 18.06 students, Professor Gilbert Strang wrote: “In class I also had an opportunity to say a few words about the sad

events of last week and the support I feel for all of you from the President down, the faculty wants only good for every one of you. Please let me know any time I can help you.”

Other instructors also expressed similar sentiments and decided to lighten their classes’ workload this week. 18.06 and other classes pushed back problem set due dates, and some classes, including 6.01 and 6.006, made tests scheduled for this week optional.

Members of the MIT community who feel affected by the deaths can access MIT student support resources and Mental Health Services at <http://together.mit.edu>, or via phone at 617-253-2916 during the day and at 617-253-4481 during nights and weekends.

ELLIPSIS TRIO

PIANO TRIOS
by Charles Ives, Igor Iwanek,
and Arthur Foote

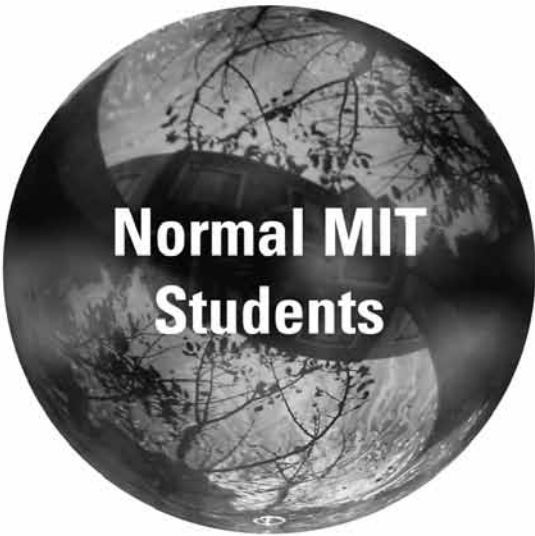
SATURDAY
MAR 21
7:30



Killian Hall, MIT 160 Memorial Dr., Cambridge, MA

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your
story



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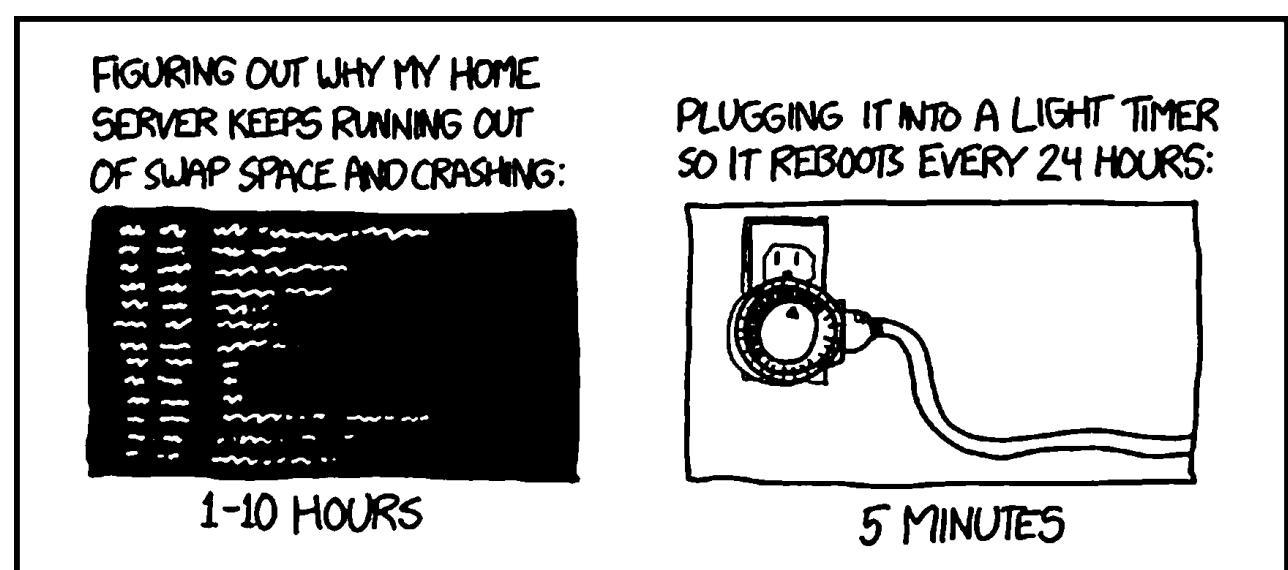
I'M DOING AN ART PROJECT WHERE I TAKE A PICTURE OF MYSELF EVERY HUNDRED YEARS.

I'M DOING AN ART PROJECT WHERE I TAKE A PICTURE OF MYSELF EVERY $\frac{1}{24}$ TH OF A SECOND.

I'M DOING AN ART PROJECT WHERE YOU CAN COME TO MY HOUSE AND WATCH MY ACTUAL FACE AGE IN REAL TIME.

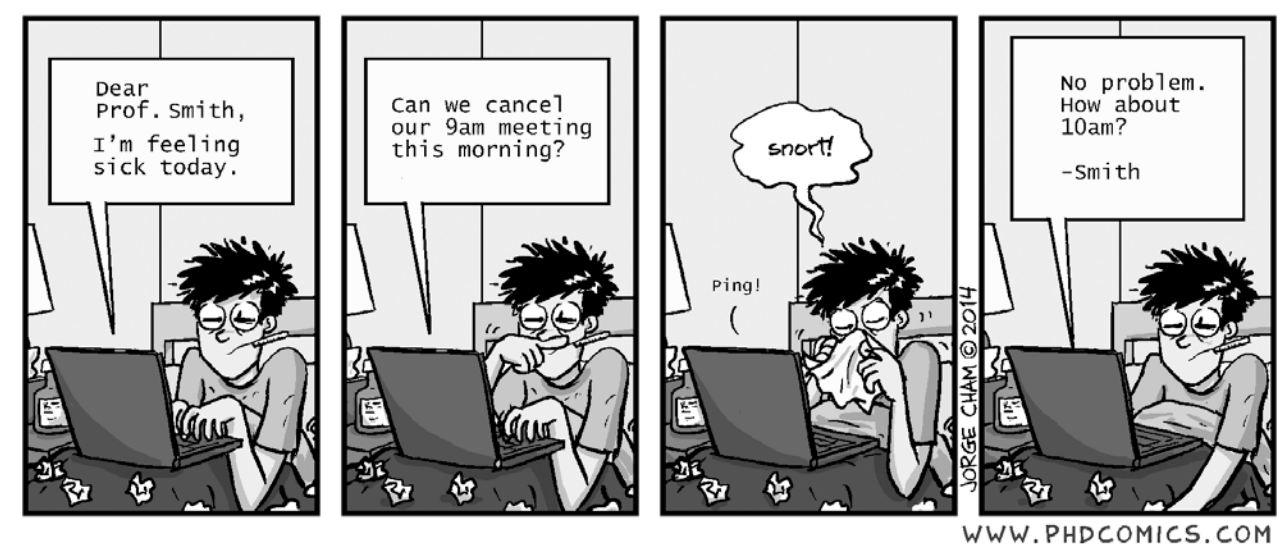
I'M DOING AN ART PROJECT WHERE YOU ALL DO THOSE THINGS WHILE I EAT A BURRITO.

[1495] Hard Reboot



WHY EVERYTHING I HAVE IS BROKEN

Googleing inevitably reveals that my problem is caused by a known bug triggered by doing the exact combination of things I want to do). I can fix it, or wait a few years until I don't want that combination of things anymore, using the kitchen timer until then.



PILED HIGHER AND DEEPER



by Jorge Cham



WWW.PHDCOMICS.COM

This message brought to you by that manuscript you're supposed to be writing.

Sudoku I

Solution, page 14

	4	5			2	1		7
8		3						
7							8	5
5	7	6			9			
			5	6	8			
			4			5	2	6
3	9							8
						4		2
2		7	1			6	9	

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Sudoku II

Solution, page 14

9		4		6			3	
	6	1						
5	7		1	8	4			
	4					9		3
			9		6			
1		2					8	
			4	7	2		5	8
						7	2	
	2			5		3		9

Instructions: Fill in the grid so that each column, row, and 3 by 3 grid contains exactly one of each of the digits 1 through 9.

Techdoku I

Solution, page 14

36x			60x		2
	30x			4x	
4		11+		40x	
3÷	3		5x		3x
	20x			6	
40x				18x	

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

Techdoku II

Solution, page 14

20+				24x	
4-	15x				
		6x	300x		1-
2x				24x	
20+					1
		24x			

Instructions: Fill in the grid so that each column and row contains exactly one of each of the numbers 1–6. Follow the mathematical operations for each box.

Saturday Stumper by Lars G. Doubleday

Solution, page 13

ACROSS

- 1 Fallen seed, often
- 12 Rating for cover applications: Abbr.
- 15 Pan, for instance
- 16 " __ Town Too" (James Taylor duet)
- 17 Certain message recipients
- 18 Bother
- 19 The Apple __ (Tasmania nickname)
- 20 Grammarian's concern
- 21 Where La Bohème premiered
- 23 High school subject?
- 25 Put on again
- 27 Tray labels
- 30 Close
- 31 Call aon
- 34 Poet encouraged by Longfellow
- 36 ". . . __ lack thereof"
- 37 1-800-__-LEARN (Department of Education's phone number)
- 38 Common dabbler

40 Kick back
41 About 90% of new US
homes have them
42 Playwright who wrote in
Danish
43 Humble
45 She followed Julie and
Liza in Broadway's Victor/
Victoria
47 Half a pair for pairs
49 Source of rolls
51 Traditional Basque apparel
55 Basic wrap
56 Horse-opera comebacks
59 Surname meaning "white"
60 Bit of repartee
61 Verbal whammy
64 Key that may close a
window
65 Its coat of arms includes
two palms and three lions
66 Utmost
67 Function runner

DOWN

1 All wrong
2 Dissect, in a way

- 3 Flat from overuse
- 4 Prince Andrew's younger daughter
- 5 Fold opening
- 6 Hook-and-loop product
- 7 Bright flash?
- 8 Double in baccarat
- 9 Life of Pi cover illustration
- 10 Band hanger-on
- 11 '60s "meet your secret admirer" game
- 12 2014's highest-paid female athlete, per Forbes
- 13 Jobs in a digital workplace?
- 14 It has the lead
- 22 A as in Andalusia
- 24 Certain targets, collectively
- 26 One with a big mouth
- 28 Modern bibliography components
- 29 They covered Atlantis
- 31 Beefeaters, e.g.
- 32 Crystal, nine times
- 33 "___ Stole My Lunch Money!" (2011 Weekly World News headline)
- 35 Very thin

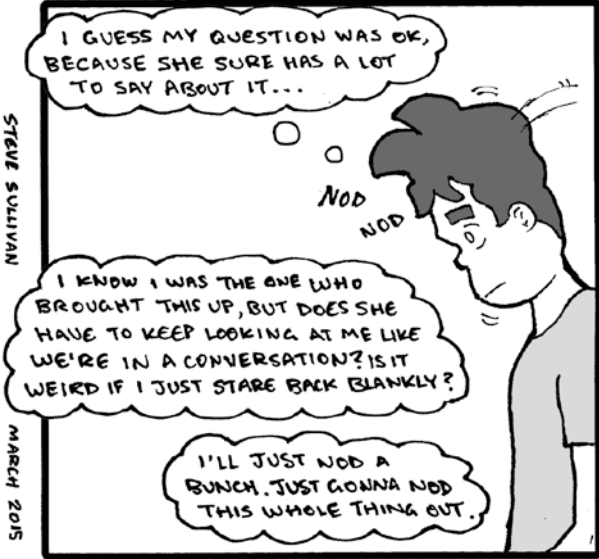
1	2	3	4	5	6	7	8	9	10	11		12	13	14
15												16		
17												18		
19					20					21	22			
23				24				25	26					
			27				28	29		30				
31	32	33					34		35				36	
37													40	
41														
45			46				47		48					
49							50		51				52	53
55							56	57	58			59		
60					61	62					63			
64					65									
66					67									

39 Opposite of 1 Down
44 Rips into
46 Mother Jones employer:
Abbr.
48 Inspiration for American
Hustle
50 Person driven

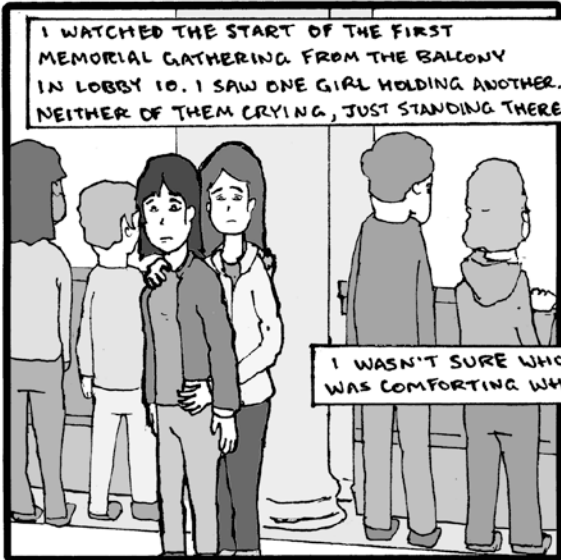
52 1948 Literature Nobelists
53 Strip alternative
54 More sound
57 Underestimates, say
58 Forward
62 Don Giovanni pronoun
63 Copying

ALRIGHT, TODAY'S THE DAY. I HEARD THERE'S SOME KIND OF CLASS PARTICIPATION GRADE SO I AM DEFINITELY ASKING A QUESTION.

SHOULDN'T BE HARD. JUST THINK OF AN INTELLIGENT QUESTION, THE ANSWER TO WHICH ISN'T BLATANTLY OBVIOUS AND WILL BE INTERESTING TO THE OTHER HUNDRED STUDENTS IN THIS CLASSROOM.



IT'S WEIRD DOING HOMEWORK
AND GOING TO CLASS WITH
TRAGEDY GOING ON AROUND ME.



49 Hits the road
51 Tooth docs' org.
54 Order-filling intervals
59 Imitated
60 Chapters of history
61 Try for a job
62 Commotion
63 Keep for later
64 Itinerary
65 Author unknown: Abbr.
66 Venetian blind strip
67 Small quarrel

DOWN

1 Cop's ID
2 Wrong move
3 Sun-dried brick
4 __ Scotia, Canada
5 Heed, as advice
6 Drop (down), as cash
7 "Ali __ and the Forty Thieves"
8 More lively
9 Daily publications
10 Bone-dry
11 Perform a tune
12 Overfill
14 Get one's strength back

1	2	3	4			5	6	7	8		9	10	11	12
13				14		15					16			
17						18					19			
20					21					22				
23				24					25					
			26					27				28	29	30
31	32	33				34	35					36		
37					38					39	40			
41					42					43				
44			45	46					47					
			48				49	50				51	52	53
54	55	56				57					58			
59					60					61				
62					63					64				
65					66						67			

54 "Bye-bye!"	57 Spoken aloud
55 "Once __ a time . . ."	58 Stock-market debuts, for
56 Overhaul	short



Andrew A. Busse '15 spikes the ball to the other side. MIT Men's Volleyball played Dominican University Tuesday night in a close game, losing 2-3.

CHAARUSHENA DEB—THE TECH

Expo addresses bitcoin trading and regulation

Litecoin creator says bitcoin will trump other currencies

Bitcoin Expo, from Page 1

base, a bitcoin wallet and exchange service.

Lee spoke on the “nature of money” and said he believes cryptocurrency represents money’s best form. “I paid for my flight using a currency [Litecoin] I created three and a half years ago,” he said. “I think this deserves an ‘achievement unlocked.’”

Other Saturday speakers discussed bitcoin regulation, general accessibility, value fluctuation, and trading. “Mastering Bitcoin” author Andreas Antonopoulos discussed bitcoin’s public perception in the media and the benefits of the current bitcoin mining system.

“It’s not about bitcoin succeeding,” Antonopoulos said in response to a question about plans to transition from today’s financial system to one based on bitcoin. “It’s simply about bitcoin surviving while the entire world economic system collapses in ashes around it.”

Gavin Andresen, a developer of the bitcoin protocol and chief scientist at the Bitcoin Foundation, delivered Sunday’s opening keynote. He discussed some of the technical changes that bitcoin would have to make in order to handle worldwide demand for transactions.

Other Sunday speakers discussed current and future bitcoin technologies, as well as challenges like scalability, proof of payment, and security. Armory Technologies developer Andy Ofiesh talked about the advantages of a decentralized proof-of-payment system, and bitcoin core developer Peter Todd explained how bitcoin’s payment verification structure can be scaled up indefinitely.

Sunday also included student project presentations, including one from Sam Udotong ’16. Udotong presented his app, Fireflies, a person-to-person delivery service that uses bitcoin payments. Udotong and his team won the Awesome Award in last year’s MIT Bitcoin Competition (BitComp).

The expo wrapped up on Sunday afternoon with remarks from the presidents of the Wellesley and MIT bitcoin clubs.



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CONCERT REVIEW

Stravinsky, Debussy, and Brahms at the BSO

Dutoit leads the BSO and Julia Fischer

By Katherine Young

When you hear Igor Stravinsky's name, what comes to mind? For most, it would be the *Rite of Spring*, a revolutionary work that sparked a riot the night of its premiere. For others, the name may conjure up visions of *Petrushka* or the supernatural *Firebird Suite*. What is definitely not associated with Stravinsky is Johann Sebastian Bach, the master of fugue and counterpoint, whose groundbreaking musicality was deeply rooted in the German Baroque tradition. That is, unless you know the story behind Stravinsky's *Concerto in E-flat for chamber orchestra*.

This work was commissioned for the 30th wedding anniversary of Robert and Mildred Bliss, owners of Dumbarton Oaks estate, the estate after which Stravinsky's work was named. Envisioned as a modern version of the concerto grosso and written in the fast-slow-fast sequence, the overall arc is reminiscent of Baroque form. The scoring in the strings, as well as the opening movement, plainly suggests *Brandenburg Concerto No. 3*, and even Stravinsky himself admitted to drawing inspiration from Bach's music. Though many of his works were influenced by older and foreign styles, Stravinsky still composed through his modern 20th century lens, bringing fresh dissonance and polyphony to this chamber piece.

With a single row of seated strings and a few wind players in the back, the stage

seemed oddly empty. But in its fourth performance of *Dumbarton Oaks*, the BSO was up more than up to the challenge of tackling Stravinsky's concerto for chamber orchestra. The sharp attack of each unpredictable accent accentuated the crispness of the first movement. Every player seemed both a soloist and a chamber musician, their sounds all distinct to the discriminating ear but intermingling in the most impeccable way.

Next was Debussy's *Images pour orchestre*, a set of three works, each drawing from music of a different country: *Gigues* from English folk songs, including "*The Keel Row*"; *Ibéria* from Spanish music, such as Bizet's *Carmen*; and *Rondes de printemps* from popular French children's songs. Imagine a collection of three picture-perfect postcards — the first of rolling Northumberland moors, the second of rural Spain, and the third of the idyllic countryside of Debussy's native France. The BSO under the baton of Dutoit delivered the *joie de vivre* encapsulated in these images. Whether it was the sneaking tremolo in the viola section, the dialogue of glissandos between the violinists, or the impassioned theme played on the oboe d'amore in *Gigues*, *Images* gave the imaginative listener a tour of the Europe Debussy knew.

When Charles Dutoit returned to the stage, this time with violinist Julia Fischer, the highlight of the afternoon began. Professionalism, along with freedom of movement and expression, was the theme for Fischer, as

always.

Written through a lengthy back-and-forth collaboration between Johannes Brahms and Joseph Joachim, the *Violin Concerto in D, Opus 77* begins with an orchestral exposition. The theme starts in the low strings, bassoons, and horns, ebbing and flowing with a deceptive calm. With a look of imperturbable tranquility, Fischer chose to keep her hands by her waist and crossed at the wrist, holding this position for the full *tutti* introduction.

In no time, the music thickened, leading to the dramatic entrance of the solo violinist at around the three-minute mark. Fischer's calm was swiftly broken with her much-anticipated first note, a ringing D, followed by explosive arpeggios, scaling the heights with quick runs and wide-reaching chords. The first movement of Brahms' *Violin Concerto* is longer than the latter two combined — it was a marathon that Fischer finished with great stamina.

After a long breath, the *Adagio* began. Whereas in the first movement Fischer wowed the audience with her virtuosity, it was here in the slow middle movement where the absolute control she had over her bow shone through. Nonetheless, what I had been waiting for was the ecstatic éclat of pure joy, when, with the first variation of the *Rondo* theme, Fischer's sound finally opened up to the heavens. The rest was a strong race to the finish, brimming with double stops and wild passages that ran the full gamut of her

Stravinsky Concerto in E-flat, "Dumbarton Oaks"

Debussy Images pour orchestre

Brahms Violin Concerto in D, Opus 77

Guadagnini.

Her display of violin acrobatics didn't stop there — returning to the stage to play an encore, she treated us to the famed Paganini's *Caprice No. 24*, a piece widely feared among violinists as one of the most difficult solo pieces ever written for the instrument. Calling upon a wide variety of advanced techniques, including rapid left-hand pizzicato and parallel octaves, the caprice is always a showstopper when played well.

As if the music wasn't demanding enough, within first few variations, a strand of horsehair on Fischer's bow snapped in half. Compensating with her years of performance experience, she acted as if she hadn't even noticed. But the real test would come in the devilish ninth variation, featuring lightning-fast alternating right- and left-hand pizzicato. Even with half a strand of bow hair dangling between her fingers and the strings, her concentration never broke and she passed with flying colors. All around, a concert well worth missing an 18.03 lecture.

CONCERT REVIEW

Yo-Yo Ma's modern-day Silk Road

World-famous cellist's eclectic ensemble visits Boston

By Ray Wang

STAFF WRITER

World-renowned cellist Yo-Yo Ma has done more than create music with his Silk Road Ensemble — he's united the world with an innovative approach to cross-cultural exchange. His eclectic group, which performed at Symphony Hall as part of the Celebrity Series of Boston last Wednesday, consistently breaks down the borders of music. Featuring instruments, composers, and musicians from every corner of the globe, the Silk Road Ensemble performed six original pieces — at times scattered, but thoroughly vibrant and entertaining.

The Ensemble introduced itself with *Side In Side Out*, a work by Kojiro Umezaki with jumble of instruments and tones. Umezaki's shakuhachi, or Japanese bamboo flute, was the highlight. Because air

flowed liberally through the flute without substantial tone, the sound of rushing wind contributed to the edgy nature of Umezaki's solos.

Yo-Yo Ma, both artistic director and performer, exudes warmth and geniality. After joking about the weather, he made some remarks on the 15th anniversary of the Ensemble, and led his group into the *Taranta Project*, a feverish piece. The audience loved Joseph Gramley's percussion solo, using his hands to create a beat all over his body, which would have seemed impromptu if not for its impressive precision.

My favorite piece was *Paramita*, an arrangement by composer Zhao Lin, featuring Ma on cello. Through mesmerizing movements, structured like a sublime film score, the Ensemble was able to convey the story of a Tang Dynasty monk's pilgrimage. Ma, here more than in any other piece, dis-

played his universally acclaimed clarity and smoothness of tone. I preferred this piece because it was by far the best narrative of the six — while some others seemed energetic, they elicited a weak image, and told no tale.

Of course, the skill required to perform each piece was evident. *Cristina Pato's Latina 6/8 Suite* was a torrent of sound, a mix of Italian, Spanish, and Latin American traditional dances. Her Galician bagpipes were wailing and musical, and the double bass boomed heavily, driving each movement into the next. I loved the evident jazz influences and multicultural roots, though audience members could have easily gotten lost in the fray.

Jugalbandi, Sanskrit for duet, featured Kayhan Kalhor on the Persian fiddle and Sandeep Das on the tabla, the Indian drums. The two unquestionably have

The Silk Road Ensemble with Yo-Yo Ma 15th Anniversary Concert

chemistry, as Das himself remarked before the piece. While Das skillfully set a sound of ambience in the slow-building piece, Kalhor's kamancheh, as it is called, gave off a thoroughly pleasing sound — nasal, yet mellow. It matched well with the cello and violin accompaniment from Mike Block and Colin Jacobsen, respectively.

Yo-Yo Ma, a French-born Chinese American who graduated from Harvard in 1976, has one of the most expansive repertoires of all musicians. He has performed at the edge of many genres and cultures, and his creativity flows into others, radiating from his Silk Road Ensemble.



Yo-Yo Ma and the Silk Road Ensemble perform at the Boston Symphony Orchestra.

COURTESY OF ROBERT TORRES

ICCA Northeast Quarterfinal held at MIT

At the end of February, the International Championship of Collegiate A Cappella (ICCA) held the last of four Northeast Quarterfinals of the season in MIT's Kresge Auditorium. This was the ICCA's 19th season of student a capella competitions, which have become increasingly popular due to the movie *Pitch Perfect*. And looking around, I could see the extent of a *capella*'s popularity — all of Kresge's 1200 seats were filled with enthusiastic students and supportive families.

The night began with a fun and energetic performance comprised of several mashups of catchy pop songs by S5ockapella from Salem State University. Next up were the Touchtones from Cornell University, the first of four all-female groups to perform that night. There is a noticeable difference between co-ed groups and all-female groups: because women have higher voices than men, all-female groups usually cannot incorporate basal tones into their performance, thus necessitating stronger harmonization and more precision. The result is a distinctive, clearer, and more ethereal sound.

All of these groups proved that the lack of male singers neither hindered nor limited their performances: Pitch, Please! from Northeastern University blew the crowd away with a powerful and chilling rendition of "Howl" by Florence + The Machine, UHarmories from the University of Hartford competed for the first time with an enjoyably nostalgic array of '90s songs, and the Simmons Sirens from Simmons College exhibited their

At the competition, MIT was proudly represented by the Chorallaries, MIT's oldest co-ed a capella group. The Chorallaries took full advantage of their 12 minutes, opening with a passionate execution of Carrie Underwood's "Good Girl" soloed by Izzy Lloyd '18 and ending with a fun and energetic mashup of "Shut up and Dance" and "Boogie Wonderland" performed by Nick Benson '16, Royal Morris '15, and Hannah Wood '15. Scott Viteri '18, Alecia Maragh '15, and Molly Tracy '16 also soloed, completing the Chorallaries' phenomenal lineup that displayed impeccable technique and synchronization.

Most noticeably, in the sea of matching black, formal attire, The Vassar Devils from Vassar College instantly grabbed attention when they came out in grey toned garb that emanated urban cool. The Vassar Devils further defied the crowd's expectations with their unique choreography. As Ryan Chung '18, a member of MIT's a capella group, Toons, explained, by isolating their soloist at the opposite side of the stage "The [Vassar] Devils effectively used the entire stage to mirror the mood and content of the songs in their choreography."

The performances concluded with some more talent from MIT. Although not competing, MIT Resonance were featured as guest performers. While the judges were deliberating, Resonance reinvigorated the crowd with a medley of "Let's Get It Started," "As Long as

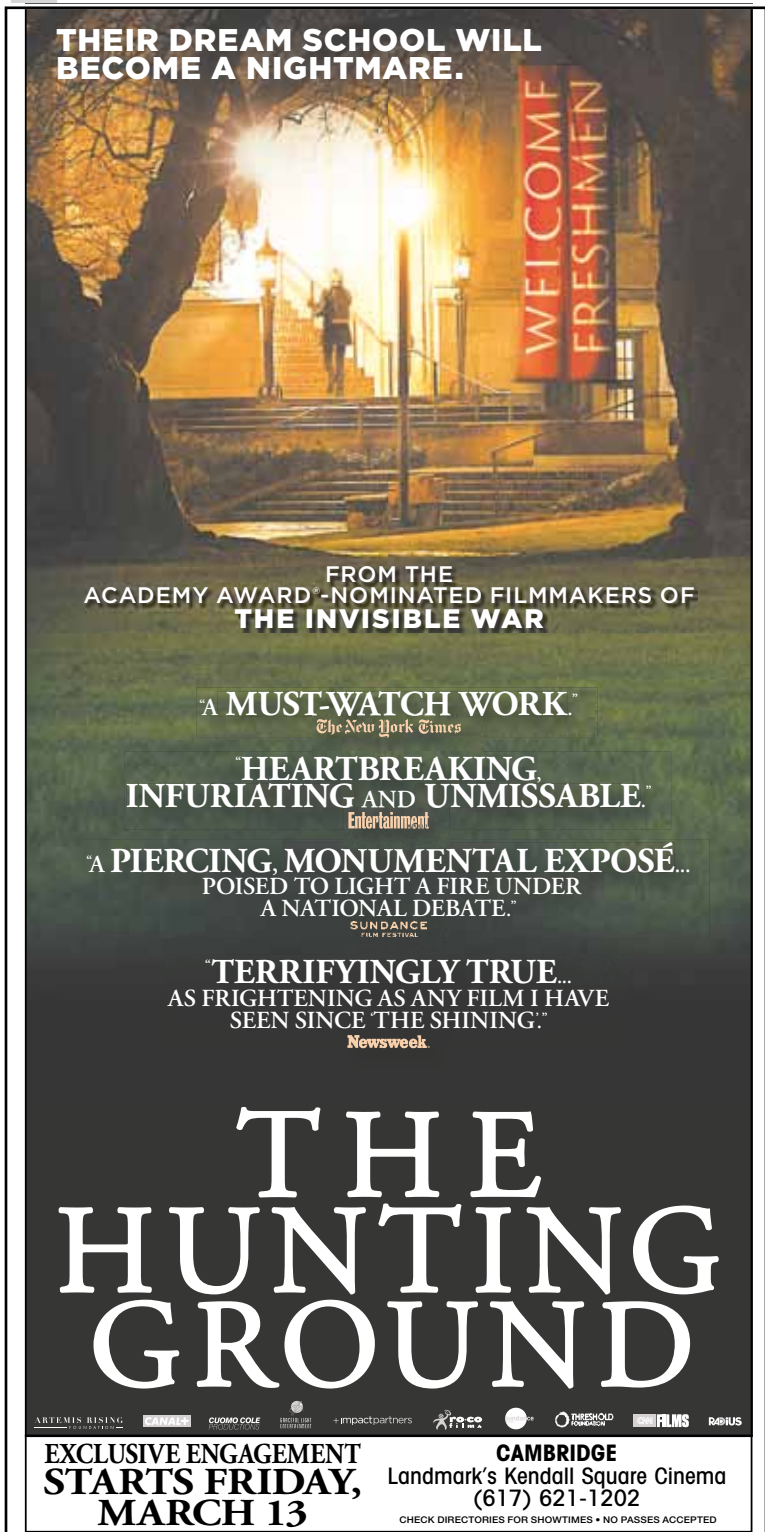


Scott L. Viteri '18 performs with the Chorallaries at the International Championship of Collegiate A Capella Northeast Quarterfinals on Saturday, February 28.

Throughout the night, it became increasingly clear that the beauty of a *capella* comes from unity of the singers. The quality of a performance is contingent on the ability of the singers to harmonize with each other and stay in time. Additionally, to complement and emphasize this auditory unison, the groups used matching outfits and synchronized. The unity extended beyond team members — there was a shared sense of community and respect between competing groups, made evident when at the end of the show, everyone gathered on stage to sing “Titanium” with Resonance.

But despite the sense of community, there had to be a winner. After twenty long, anticipation filled minutes, the judges finalized their scores and announced the winners. Two groups clearly stole the show that night. One, the Vassar Devils, came in second place with 396 points. In addition, the Vassar Devils were recognized for having the best choreography and best composition.

And finally the moment the crowd had been waiting for: first place, with 400 points, was awarded to Nor'easters from Northeastern, an obvious crowd favorite from the very start, who had electrified the audience with a powerful and emotive rendition of "Elastic Hearts" by Sia. The Nor'easters were also recognized for having the Best Percussionists, honoring members Kenji Guldner and Beejul Khatrii. These two teams move on to Semifinals, which will be held in Boston Symphony Hall on March 22, 2015.



Of All the Flowers: Songs of the Middle Ages

The Boston Camerata impresses with reconstructed works

ARTS EDITOR

The group consisted of eight talented performers, a mix of vocalists and musicians playing the lute, vielles (a bowed string instrument used in medieval music), bells, recorder, harp, and more.

MIT music professor Michael Scott Cuthbert hosted the concert, providing historical context for the pieces and inserting readings of contemporary poetry between sets. What made this concert special was the focus of the then and the now — how we can make old music, in a way, new. The performance began with songs that Italians would've heard in the 14th century. Cuthbert developed open-source software that allows music scholars to analyze music to find patterns and “fill in the gaps” between arrangements, gathering a more robust picture of pieces of music. Using this technology, we were able to hear arrangements, particularly of Machaut's compositions, that would have never been heard by 14th-century audiences — what a treat!

As the title of the performance suggests, each composition was from the medieval era and as such, the pieces were sung in Latin, French, and Italian. The

Of All the Flowers: Songs of the Middle Ages

Artistic Director: Anne Azéma

Performed by the Boston Camerata

concert reminded me that you don't have to understand what a person is saying (or in this case, singing) to know that it is beautiful. In fact, there is something almost spiritual about hearing something graceful and elegant that is obviously from a different time and in a language you don't speak. I didn't need to understand what the song was about; I didn't need to analyze lyrics or know the histories surrounding the music. Instead, I could sit back and close my eyes focusing on its simple beauty — the conversations between viles, the enchanting and haunting Gregorian chants.

My favorite pieces of the concert included the anonymous chants that started the performance, *Flo-rete flores quasi lilium* and *Quae est ista*, as well as *O Rosa Bella*, *Ecco la primavera*, and *Ahi, mi*, which came later in the show. Themes of flowers, spring, and rebirth were apparent throughout the performance (though as Cuthbert pointed out, they planned the concert several months ago and hoped that the spring-themed set would mirror the weather).

The Boston Camerata performs all over the globe, but they will play at the Pickman Concert Hall in Cambridge on Sunday, March 29 before they leave the States to perform in Europe — so catch them before they go.

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Isabella D. DiDio '16 attacks the net during MIT's 12-9 win over Keene State College on Wednesday, March 4.

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MIT develops new Ebola testing method

Members of MIT’s Institute for Medical Engineering and Science (IMES) have developed a thin paper strip that can detect the Ebola virus in ten minutes when exposed to a sample of a patient’s blood, an improvement over previous methods that took days and required a laboratory setting.

The technology will allow health care workers to test for Ebola quickly in the field. Getting a reading is easy: the paper simply changes color if the patient is infected.

Many news outlets have praised the IMES team’s work, a product of the efforts of postdocs, instructors, and visiting scientists. An article published in *Forbes* predicted that the newly developed technology, which costs only \$2 per test and requires little training to administer, could be a “game changer” in the West African struggle against Ebola.

The project’s lead researchers remarked that the silver nanoparticle-based strip makes an Ebola test as quick as an in-home pregnancy test. Moreover, the strip simultaneously tests for dengue and yellow fever.

Senior author Lee Gehrke said that their work could be applied to future outbreaks. “[W]e’re thinking about what’s coming next. There will undoubtedly be other viral outbreaks. It might be Sudan virus, it might be another hemorrhagic fever. What we’re trying to do is develop the antibodies needed to be ready for the next outbreak.”

—William Rodriguez

Partners from famed startup accelerator Y Combinator lead discussions at MIT

Sam Altman encourages students to start their endeavors early, but cautions against trying to balance school and startups concurrently

By Drew Bent
ASSOCIATE NEWS EDITOR

On Thursday evening, over a hundred students gathered in room 26-100 to learn something that is usually not formally taught in MIT classes: how to run a startup.

Leading the discussion were three partners from Y Combinator, one of Silicon Valley’s leading startup accelerators. Several MIT companies, including Dropbox and Stripe, were funded by the accelerator.

“There is no pre-startup like there is pre-med,” said Sam Altman, the 29-year-old president of Y Combinator. He encouraged students to

start working on a startup immediately and learn along the way.

For students interested in startups, universities form a great hub of ideas and people, said Altman. “School is the best possible place to meet potential cofounders.”

Altman cautioned people, however, from attempting to do both school and startups at the same time. People who try it often “fail miserably at both,” he said.

Students were also encouraged to steer clear of large companies. It’s easy to always want the next most prestigious title—Andover, MIT, Facebook—said Altman. He argued that small, fast-growing startups offer students more signif-

icant roles and fulfillment in their jobs.

Y Combinator visited MIT as part of an annual East Coast tour in which they recruit students for their summer accelerator program. Almost all the students in the audience said they wanted to apply at some point.

Y Combinator usually invests \$120 thousand in its startups, but Altman revealed during the Q-and-A that they have plans for helping startups requiring more money. “We have some news coming on that,” he said.

During the Q-and-A, Altman also said the greatest weakness he finds in MIT students who go

through Y Combinator is their “unwillingness to go out and actually talk to users.”

Entrepreneurs need to both write code and talk to users, he said. It’s not one or the other.

Students wanted to know which types of startups Y Combinator would fund, asking about everything from nuclear fusion reactors to biotechnology.

According to the partners, any startup is fair game.

One student even posed a non-software project of his that removes ice from airplane wings. Without hesitation, Altman responded, “We’ve actually funded an ice removal company before.”

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Solution to Saturday Stumper
from page 7

U	P	S	E	T	V	I	C	T	I	M	S	P	F	
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E	S	C		S	I	E	R	R	A	L	E	O	N	E
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Solution to About-Face
from page 8

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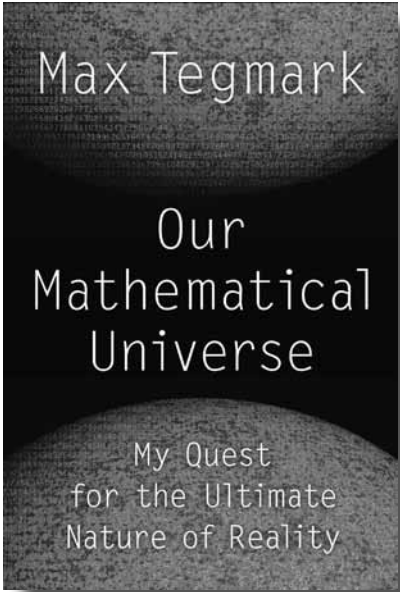
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Solution to Sudoku I
from page 7

9	4	5	8	3	2	1	6	7
8	6	3	7	5	1	2	4	9
7	2	1	9	4	6	3	8	5
5	7	6	2	1	9	8	3	4
4	3	2	5	6	8	9	7	1
1	8	9	4	7	3	5	2	6
3	9	4	6	2	5	7	1	8
6	1	8	3	9	7	4	5	2
2	5	7	1	8	4	6	9	3

Solution to Techdoku I
from page 7

1	4	3	6	5	2
3	6	5	2	1	4
4	1	6	3	2	5
6	3	2	5	4	1
2	5	4	1	6	3
5	2	1	4	3	6

Solution to Sudoku II
from page 7

9	8	4	2	6	7	5	3	1
2	6	1	3	9	5	8	4	7
5	7	3	1	8	4	2	9	6
7	4	6	5	2	8	9	1	3
3	5	8	9	1	6	4	7	2
1	9	2	7	4	3	6	8	5
6	3	9	4	7	2	1	5	8
8	1	5	6	3	9	7	2	4
4	2	7	8	5	1	3	6	9

Solution to Techdoku II
from page 7

4	5	3	6	1	2
6	1	5	2	3	4
2	3	1	4	5	6
1	2	6	3	4	5
3	4	2	5	6	1
5	6	4	1	2	3

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MIT participates in International Development Hackathon; MIT students in half of winning teams

“Code for Good” class held over IAP also connects students with nonprofit organizations

By **Angela Leong**
STAFF REPORTER

This year, the Tufts Entrepreneur Society and Tufts Empower groups joined MIT to organize the annual International Development Hackathon (IDHack), which took place Feb. 13-14 at Tufts University. For the past two years, MIT’s Global Poverty Initiative (GPI) student group has partnered with a Harvard student group to plan the annual IDHack.

This year’s IDHack drew around 24 projects and 300 attendees, including sponsors, volunteers, and representatives from organizations. This was an increase from the 20 projects and 200 attendees last year. There were MIT students on four of the eight winning teams.

Unlike traditional hackathons, IDHack provided participants with project proposals from organizations involved in international development, including the World Bank, the Peace Corps, and the

World Food Program, said Jenny Lin ’16, the GPI member who planned this event. Representatives from these organizations were also present at the hackathon to work with participants.

Malte B. Ahrens ’17, a participant at this year’s IDHack, characterized the projects as “hacks with purpose,” and the fusion of international development and hackathons as “an interesting mindset [of] let’s save the world, fix things, be a hero [...] combined with the traditional energy and enthusiasm of a hackathon, of that all-nighter adventure.”

He also expressed concerns about the “standard approach for a lot of international development hackathons to [...] condense all the problems down to problem statements, give them to people who might build a solution from an engineering or technical side, and take that output and try to make something with it... [It] makes you wonder if perhaps this overspecial-

ization... makes you lose sight of the bigger picture.”

Looking ahead, Lin said that a goal of IDHack was “for projects that are made in the hackathon to have a life after the hackathon [and] for more of the organizations to take on projects that were implemented.” They have reached out to representatives at the World Bank about continuing projects, recognizing that “the big part of them having a life after the hackathon is that we connect the participants with the organizations that they’re working for.” For instance, the Peace Corps adopted the design of a new job search and application portal created by one of the winning projects last year.

The IDHack organizers were not alone in their mission of connecting students to nonprofits, and encouraging students to use their technical skills to create social impact. This January, 28 students had the opportunity to work with seven local nonprofit organizations in an IAP

class titled “Code for Good,” which was sponsored by the MIT Institute of Electrical and Electronics Engineers and Association for Computing Machinery (IEEE/ACM) club.

Anish R. Athalye ’17, Benjamin Y. Chan ’16, Victoria L. Dean ’17, and Erik S. Nguyen ’16 created the class after noticing that MIT lacked programs that had a “format where you can work with a non-profit organization for an extended period of time, and really help them by building some infrastructure they need using your [computer science] skills,” according to Athalye.

“Not very many people whom I’ve encountered at MIT spend their free time building projects to help the community per se in a very material way, and this program’s goal is to facilitate that,” said Chan.

Comparing the Code for Good class to traditional hackathons, Athalye added, “We really wanted to facilitate connections between MIT students and local non-profit organizations, connections that

students might maintain after our class was over.”

In designing the class, Chan explained that the team focused on smaller nonprofits that lacked the bandwidth to develop their own applications or technologies, because these were the organizations that could especially benefit from MIT’s resources. The team was able to organize multiple visits to the offices of the nonprofits, to allow students a firsthand understanding of their mission and work, through direct interactions with members of the nonprofits.

The Code for Good team has been contacted by individuals interested in starting similar groups at their schools, and has also met with organizers of similar programs at other schools. Dean sees potential to scale the class, which received cross-registrations from Harvard and Wellesley students.

Chan added, “We’ve helped out seven nonprofits in a month; why can’t we do even more?”

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NOTES

Law enforcement, victims, others testify about week of 2013 Marathon bombing and aftermath

Henniger, first MIT police officer to respond, reported that Sean Collier still had a pulse upon his arrival despite grave wounds; Collier was later pronounced dead at hospital

Tsarnaev Trial, from Page 1

Weinreb asked Harman whether the person he'd seen in the video was in the courtroom and what the person was wearing, Harman faced Tsarnaev and responded, "Yes, he's right there. He has a blue shirt on." Tsarnaev, who had been reclining in his chair until that point, leaned forward, presumably to make his apparel clearer.

Jurors also heard the recording of a 911 call from someone inside the Koch Institute who reported what seemed to be gunshots. The caller said, "it sounds like someone's hitting a trash can really loud," and that a police officer was in the vicinity.

MIT Officer David Sacco, who took the call, attempted to dispatch Collier, who was in charge of the area. After a few calls and texts with no response, enough time passed that Sacco became uncomfortable.

Sergeant Henniger drove past Collier's cruiser at around 10:20 p.m. and did not notice anything unusual. When he reached the station a few minutes later and heard that Collier had been unresponsive, he returned. The scene was the same — "the only exception was that the driver's side door was open."

He observed blood "on [Collier's] weapon" and on his holster. Both he and DiFava demonstrated the holster's three-step security feature. The fact that only one had been undone meant that someone had tried to take the weapon, argued the prosecution.

Henniger parked and walked over, "and that's when I discovered Officer Collier had been shot," he said. Because he still had a pulse, Henniger radioed for help. "Officer down! Officer down!" and later, "get on it" are heard in recordings of Henniger's calls.

Another officer who had already been dispatched reached the scene "within 45 seconds" of Henniger, and the two began to perform CPR. Soon, Cambridge Police responders including witness Brendan O'Hearn arrived and provided aid until Collier was taken away in an ambulance.

"His face and his neck were covered in blood; he had some type of a wound to his head; there was blood coming from his mouth," said O'Hearn.

During all of these testimonies, Collier's dad sat listening in the courtroom.

Victims describe smell of burning tissue

Earlier in the week, jurors were presented with testimonies that included graphic descriptions of the explosions at the marathon by victims and first responders.

Jessica Kensky, a nurse at the time of the bombing, testified Monday about the chaotic aftermath of the first blast. She recalled helping her husband, who had just had part of his leg blown off, when a man came up and told her, "Ma'am, you're on fire." Kensky ended up losing both legs due to her own injuries.

Danling Zhou, a fellow Chinese Boston University student and friend of Lingzi Lu who died in the bombings, described the carnage caused by the second explosion where the pair stood in front of The Forum restaurant on Boylston Street. After she awoke on the sidewalk, she said she knew that Lu was alive because she was yelling.

James Bath, a general practitioner who was walking down Newbury Street when he heard what sounded like a cannon, described noticing an "unmistakable smell of burning tissue and blood."

"People had dropped like puzzle pieces" on the sidewalk, he said. He described tending to Lu, who he said had lost too much blood from her injuries to be saved.

Jurors also heard the recording of a 911 call from someone inside the Koch Institute who reported what seemed to be gunshots.

Surveillance video and tweets

The prosecution presented a compilation of security camera video tracing the Tsarnaev brothers as they strode up Boylston street toward the finish line in the minutes leading up to the blast. Dzhokar stopped in front of The Forum, where he would eventually put down his backpack, while Tamerlan continued on.

Dzhokar appears to talk on his cell phone in the security footage of the restaurant's patio. He walks in the direction away from the finish line while most people in the frame look left toward the first explosion. Seconds later, a bright flash of white consumes the frame.

A later video from a different camera shows him running with other spectators down Boylston away from the finish line. The defense remained mostly quiet throughout the week, rarely cross-examining the prosecution's witnesses. But in one of the notable exceptions, lead defender Miriam Conrad grilled the FBI agent who compiled the video sequence about the timestamps on the footage, apparently trying to question whether the call depicted in the video corresponded to one listed in phone records from Dzhokar to Tamerlan, as the agent suggested, or one minutes later from Tamerlan to Dzhokar.

The prosecution also presented security footage depicting Dzhokar Tsarnaev's activities after the bombings, showing him buying milk at a Whole Foods shortly after the bombings and working out the next day at a gym at the University of Massachusetts Dartmouth where he was a student.

The jury also saw dozens of posts by two of Tsarnaev's Twitter accounts. One, @j_tsar, contained

Tweets ranging from normal college social media fare to the more ominous. "Never underestimate the rebel with a cause," he posted about a month before the bombing.

The posts by his other account, @Al_FirdausiA, included "I shall die young" in Russian and an invitation to watch videos by militant Anwar Al-Awlaki amid general comments about Islam.

Tsarnaev's manifesto

On Tuesday, jurors got a glimpse of Tsarnaev's so-called "manifesto" that he scribbled on the boat in a Watertown backyard where he hid before being captured. The prosecution has presented his writings as a confession for the crimes.

"The U.S. Government is killing our innocent civilians," the writings included. "I can't stand to see such evil go unpunished." The words were written in pencil and interspersed by blood stains and holes from gunshots that came from the shootout leading up to Tsarnaev's arrest.

The question now remains whether or not jurors will be able to see the entire boat firsthand. The prosecution wants to bring in only the panels with writings on them to the courthouse, while the defense has asked to transport the entire boat to show the writings "in context."

The court session ended early on Tuesday as Judge O'Toole took a visit to the boat to decide for himself. He has yet to rule on the request.

Falun Gong Introduction Seminar

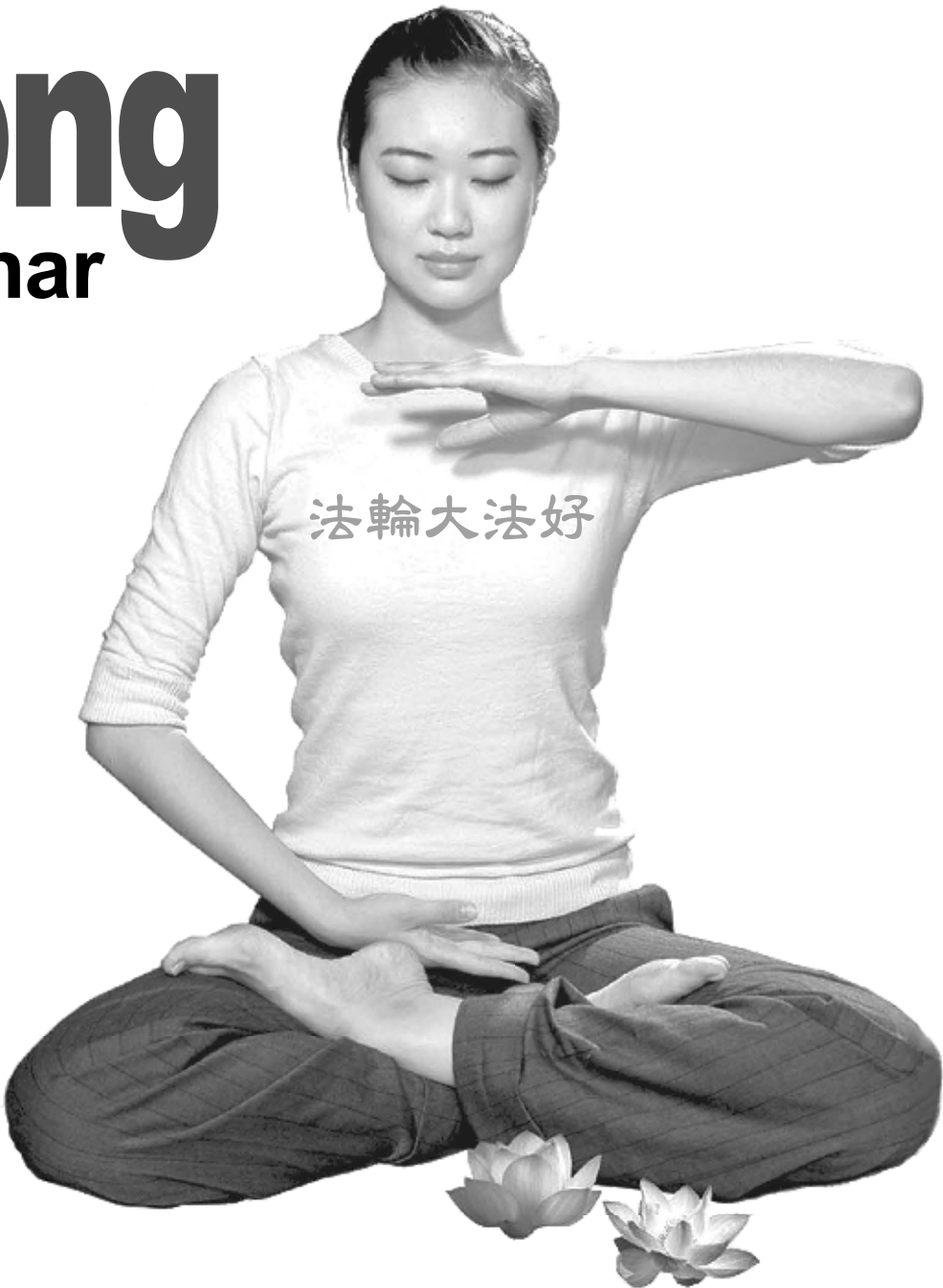
Room 56-169

Monday, March 16

7:30-8:30pm Introduction
8:30-9:00pm Free teaching of exercises and meditation

Speaker: **John Jaw, Ph.D. '75**
President of Falun Dafa Association of New England

An introductory class to Falun Gong, with a brief history of its development in China. Experience the simple practice of exercise and meditation that has drawn over 100 million in China and around the world. A powerful practice that rejuvenates health and vitality, and cultivates life through the principles of **Truthfulness, Compassion, and Tolerance.**



The MIT Figure Skating Club's Annual

FIGURE SKATING EXHIBITION

Ice Arena, Johnson Athletics Center

**Saturday, March 14
6pm**

Free Admission

**Ice Dancing • Freestyle • Group Numbers
Pairs • Theatre On Ice**

****This event is hosted by the MIT Figure Skating club and is sanctioned by the United States Figure Skating Association****

<http://web.mit.edu/skatingclub/www/Home.html>

Photo taken by Nick Wiltsie '10



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SSAC 2015 unites Stats with Sports

Sports analytics keeps growing

By Ray Wang
STAFF WRITER

The Sloan Sports Analytics Conference, held on Feb. 27 and 28, is the mecca for sports fans — dozens of teams from almost every major league, and hundreds of sports industry organizations were represented.

The centerpiece of the day's keynote panel, featuring Shane Battier, Houston Rockets GM Daryl Morey, author Michael Lewis, and NBA coach Jeff van Gundy, was Battier himself. Dubbed the “No-stats All-Star,” Battier was on the stage because of his uncanny intelligence in every aspect of the game. Without realizing he'd been doing it, Battier has spent his career playing by the statistics that drive the game, creating unprecedented efficiency for himself and his teammates. Lewis brought him into the spotlight, and Battier is now at the forefront of a wave of emphasis on analytics that has the potential to improve play and increase revenue in every sport.

The new age of analytics is something Morey strongly believes in. “If you can dream it, you can do it. Any question you can now answer, it's just about time and money,” he said, echoing the entire theme of the Conference. Five or more talks were occurring simultaneously throughout the day, ranging from franchise valuation to sports entrepreneurship to sports media, everything centered around utilizing big data.

A panel entitled Business of Sports, with Celtics Co-owner Steve Pagliuca, Octagon president Phil

de Picciotto, US Soccer Federation president Sunil Gulati, and Sacramento Kings owner Vivek Ranadive, was perhaps the most entertaining. In between serious talk about monetizing and modernizing the next-generation sports stadium, and expanding basketball to countries like India, Gulati and Ranadive ripped each other with playful banter.

The SSAC drew its fair share of regulators and commissioners, also. New NBA commissioner Adam Silver and new MLB commissioner Rob Manfred were present, as well as Major League Soccer's Don Garber.

Fifty-four graduate students from MIT Sloan's Entertainment, Media, and Sports club put together the incredible event, which was held at the Boston Convention Center. Over 100 volunteers and 19 sponsors made the conference possible for over 3100 attendees.

Booz Allen Hamilton took an entire room to showcase its latest work with machine learning and data — for example, they've been developing a machine learning technology to predict football plays, which was trained with data from past NFL seasons.

Some small student-focused events were scattered across the two days. An inaugural hackathon, presented by conference sponsor ESPN, drew 36 participants, with the winner in the student division receiving an internship at ESPN Stats and Info. The First Pitch Business Case Competition and research papers were also geared towards the over 850 students who bought tickets.

Drammis hopes to win NEWMAC

Drammis, Course 6, loves to ski

Drammis, from Page 20

really smart but nice and cool. Basically, the people, the excellent academics, the team, and the coaching staff who were pretty cool too convinced me to come to MIT.

TT: What is it like playing for the Engineers? What are practice schedules like during season and off-season?

SD: Official season practice starts October 15, so that is when we practice with the coaches. We practice 5-7 p.m. Mon-Fri and on Sat morning. During season we usually have two games a week.

In the off-season, in the fall we play pick up a couple of times a week, individually work out, do lifting, and conditioning with coach Williams and coach Viall.

In the spring, we play some pick up but focus on improving individual skills. We hit the weight room couple of times a week and work on quickness and agility.

TT: Let us go off court for a while, what are your interests academically and what do you like to do in your free time?

SD: I like Course 6 a lot. I am not really sure what specific area I want to go in yet. I am still exploring. Systems and security are two areas that are very interesting to me.

I love skiing. It is a huge passion of mine. I am not allowed to ski during basketball season but looking into the future, I would like to ski a lot.

I just got an electric drumset. I am into music so want to get better at playing drums. I am also part of the Dance Troupe at MIT. I choreograph tap with my friend Patience.

What is your target for your final season as an Engineer?

I want to win the NEWMAC championship.

Editor's note: This interview was edited for clarity and brevity.

If you want to nominate someone for “Player of the Month”, you can reach us at sports@the-tech.mit.edu.

Lin '17 NCAA bound

Wong '18 will be competing in the finals

By Mindy Brauer
DAPER STAFF

Benjamin Lin '17 and Tzer Wong '18 will represent the sabre squad at the NCAA Fencing Championship to be held March 19-20 at Ohio State. This is the second time in program history the Engineers will have multiple competitors in the same weapon at the championship as they had two sabre entries in 2001.

Making their first appearances at the national level, Lin and Wong ranked sixth and ninth, respectively, at Sunday's NCAA Northeast Regional Championship. Lin, who produced MIT's best performance since Igor Kopylov '09 secured ninth place in 2006, won all five of his bouts in the first round and then had a 3-3 outing in the next rotation before posting a 5-6 mark in the final group. Wong registered a 4-2 mark in the opening round, followed by a 3-3 ledger in the second set of round-robin action. He wrapped up his debut with a 5-6 total, giving the Engineers their first pair of sabre top-ten finishes.

UPCOMING HOME EVENTS

Saturday, March 14

Gymnastics	4 p.m., DuPont Gymnasium 2nd Floor
Figure Skating	6 p.m., Johnson Athletic Center Ice Arena

Thursday, March 12

Men's Tennis	4 p.m., J.B. Carr Tennis Bubble
Men's Volleyball	6 p.m., Rockwell Cage

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Sabrina Drammis leads MIT to its best finish in 12 years

Drammis is the seventh player to score 1000 points

By Souparno Ghosh
SPORTS EDITOR

Starting this month, *The Tech* is launching a new “Player of the Month” feature profiling one of MIT’s premier athletes from across varsity and club teams. Kicking off the series is women’s basketball sensation, Sarbina Drammis ’16.

This season, Sarbina Drammis became just the seventh player in the history of the program to surpass 1000 points. En route to being named to the Academic All-America First Team, she played in all five positions this season and led the Engineers to a sixth place finish in the New England Women’s and Men’s Athletic Conference (NEWMAC). This was MIT’s best season in over a decade.

Described by her head coach as “a leader and one of the hardest working student-athletes I have ever coached,” Sabrina has improved leaps and bounds over the last three years and emerged as one of the best players in a fiercely competitive league. We caught up with her just days after she was named to the Academic-All America First Team. She appeared remarkably humble and already extremely motivated for the next season.

The Tech: Congratulations on an amazing season and on being named to the Academic All-America Women’s Basketball first team! What are your thoughts looking back at the season?

Sabrina Drammis: Thanks. I feel honored to have gotten that

award. I couldn’t have done it without my team. Everyone works really hard and we did a lot of good things this season. Unfortunately we fell short of our goal of winning the NEWMAC championship. But now we’re focused on the next season and working hard to get it done. I want to see it happen before I leave.

TT: Let’s go back a few years — when did you know you wanted to play competitively?

SD: I used to play tennis very competitively but got convinced otherwise by my high school basketball coach. I was playing tennis at Smith Stearns Tennis Academy and training everyday. I was at a new school and wanted to try different things, and the varsity coach finally convinced me to stop playing tennis and moved me up to the varsity basketball team.

I rode the bench that season, but I got to see a lot of good players play. That’s when I realized this was the sport I wanted to pursue. I really enjoyed it.

TT: You were a high school state champion in tennis and even decided to split time between tennis and basketball in your freshman year. What tilted it in favor of basketball moving forward?

SD: I was losing some interest in tennis. I was getting burnt out as I was playing a lot. My varsity coach convinced me to shift and I didn’t regret it. I enjoyed playing tennis at a less competitive level, like with my high school team, as opposed to playing USTA tournaments.

TT: Do you miss playing

tennis?

SD: I play when I can recreationally. Luckily, last summer where I worked at Second Spectrum, we played as an office once a week. I enjoyed that a lot.

TT: You had a dream final season at the Hilton Head High School. You were quoted afterwards saying, “I really couldn’t ask for any more. It was a great year”. Could you take us through that year, in particular what you achieved and what it meant to you?

SD: Wow! That was a long time ago! We won our region that year. After our freshman year, people thought our team wouldn’t be as good because we lost a lot of seniors. But my good friends and I worked really hard. In my sophomore year, we weren’t that successful, but both in my junior and senior years we won the regional.

I enjoyed being part of the team. I liked the coach and improved a lot as a player.

TT: You must have had plenty of offers at your disposal. What prompted you to come to MIT?

SD: Well, I knew I wanted to play basketball and I wanted to do computer science. It really came down to a few options, and then I visited MIT twice. I came on a recruiting trip during the fall and that’s when I spent a ton of time with the team and realized how awesome the team was. They were really cool people. Then I came back for CPW and realized this place is really unique. People are



COURTESY OF DAVID SILVERMAN

Drammis, Page 19 Sabrina M. Drammis ’16 in action.



Photograph of Amphibious Achievement mentor, Jessica Shi (right). The 2012 People Helping People award went to Corinne Carland, past Amphibious Achievement executive member.

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